

Work Order ID 131662

Tuesday, April 21, 2015 9:03:48 AM

131662

Page 1

Item ID: D3795-1 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Ski Fwd
Start Date: 4/21/2015 Start Qty: 2.00 ***2*** Cust Item ID:
Required Date: 5/1/2015 Req'd Qty: 2.00 ***2*** Customer:
Reference:

Approvals: Process Plan: mf Date: 15-4-21 Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
D3795	C

110

0.00

110

FLOW WATER JET

Waterjet

Memo

0.00

FLOW CNC Waterjet

1-Cut as per Dwg File D3795-1 Blank

OHmw 1"

2-Deburr if necessary

2 Ø Jm15-4-21

120

0.00

120

HAAS CNC VERTICAL MACHINING #1

HAAS 1

Memo

0.00

HAAS CNC vertical machine #1

1- Mill as per Folio FA765 Rev: C & Dwg D3795 Rev: C

2-Deburr per dwg D3795

2 Ø DAS 44 9-89 15/04/30PTO
→

DQA: Ant Date: 15/05/08



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: Ant Date: 15/05/07

Work Order update only ☐

Work Order: <u>131662</u> Part No. <u>D3795-1</u> NCR No. <u>15-4901</u>		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☒ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table border="0"> <tr> <td>Skid-tube ☐</td> <td>Cross tube ☐</td> <td>Water Jet ☐</td> <td>Engineering ☐</td> </tr> <tr> <td>Machining ☒</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☒	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐																																															
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Date: <u>15/04/30</u>		Step #: <u>120</u>		QTY Effective: <u>2</u>		MRB (QSI042) Approval DAS 12 15/4/30 9-89																																																																	
Description Work Order Deviation				Disposition																																																																			
0.75 thickness is 0.725 at one location at edge of part, along 4" long section RC. Part left in the machine (setup)				Acceptable. Edge of part not under high stress. Cosmetic only.																																																																			
				Completed By DAS 44 15/04/30 9-89 Lead hand / Supervisor Approval Verification DAS 14 15/04/30 9-89																																																																			
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Work Order ID 131662***131662***

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Tuesday, April 21, 2015 9:03:48 AM

Item ID: D3795-1 Accept *N900040100* Setup Start *NS1*
Revision ID: Stop *NS2*
Item Name: Ski Fwd
Start Date: 4/21/2015 Start Qty: 2.00 *2* Cust Item ID:
Required Date: 5/1/2015 Req'd Qty: 2.00 *2* Customer:
Reference:

Approvals: Process Plan: Date: Tooling: Date: Run Start *NR1*
QC: Date: SPC (Y/N): Date: Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130	QC2- Inspect parts off machine FAI/FAIB	0.00							DAS 44 9-89
130						2	0		15/04/30
QC	Memo	0.00							
Quality Control									
140	QC8- Inspect parts - second check	0.00							DAS 14 9-89
140						2	0		15/05/01
QC	Memo	0.00							
Quality Control									
150	Identify as per dwg & Stock Location: <u>PO 131638</u>	0.00							
150									
Packaging	Memo	0.00							
Packaging									

2 DAS 6 9-89 MAY 0-1 2015

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>				Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
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Root Cause		FAULT CATEGORY																			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐																
OTHER : _____																					

Work Order ID 131662***131662***

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Item ID: D3795-1

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Ski Fwd

Start Date: 4/21/2015 Start Qty: 2.00

2

Cust Item ID:

Required Date: 5/1/2015 Req'd Qty: 2.00

2

Customer:

Reference:

Approvals:

Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run Start

NR1

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool # Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

160

QC21- Final Inspection - Work Order Release

0.00

160

QC

Memo

0.00

Quality Control

MLJ

MAY 04 2015

MLJ

MAY 04 2015

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

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Description Work Order Deviation				Disposition				Completed By																	
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Past Expiry Date ☐	Manufacturing Process ☐																								
Misidentified ☐	Past Due ☐	OTHER : _____																							

Picklist Print

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Page 1

Work Order ID: 131662

131662

Parent Item: D3795-1

D3795-1

Parent Item Name: Ski Fwd

Start Date: 4/21/2015

Required Date: 5/1/2015

Start Qty: 2.00

Required Qty: 2.00

Comments: IPP Rev:A New Issue 08-07-18 JLM Verified By:DD
IPP Rev:B 08-09-10 revA as per dwg (ecn 08-513) DD verf: EC IPP
REV:C 12.09.06 PER DWG REV.B DD VERF:JFS
IPP REV C:12.09-12 AS PER REV C JLM VERIFIED BY:DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
MUHMWB10		Purchased	No			100	sf	701.8420	5.9376	13			
MUHMWB10										**	Jm15-4-21		
UHMW 1" Black - 48"x120" Tivar Mfg.#52480104													

Location

Loc Qty

Loc Code

MAT

608.475

m131661

208.475

m132063

400

MAT018

93.367

m131335

93.367

131662

DQA: _____ Date: _____

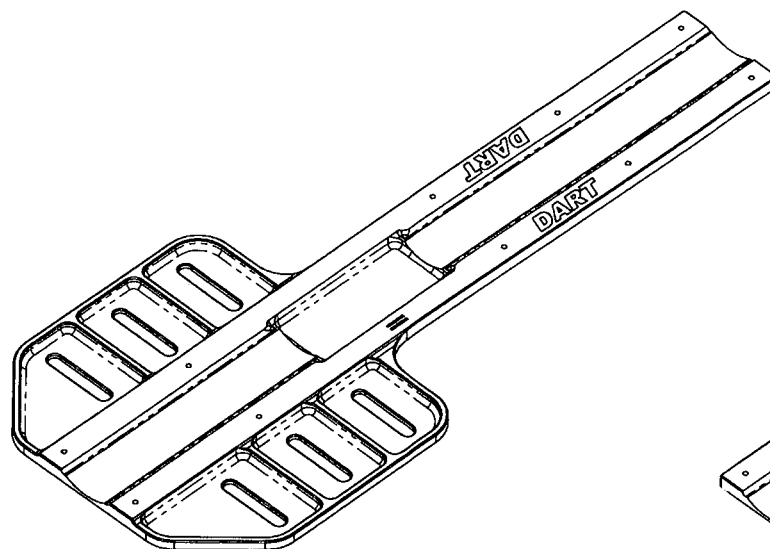


WORK ORDER NON-CONFORMANCE / UPDATE

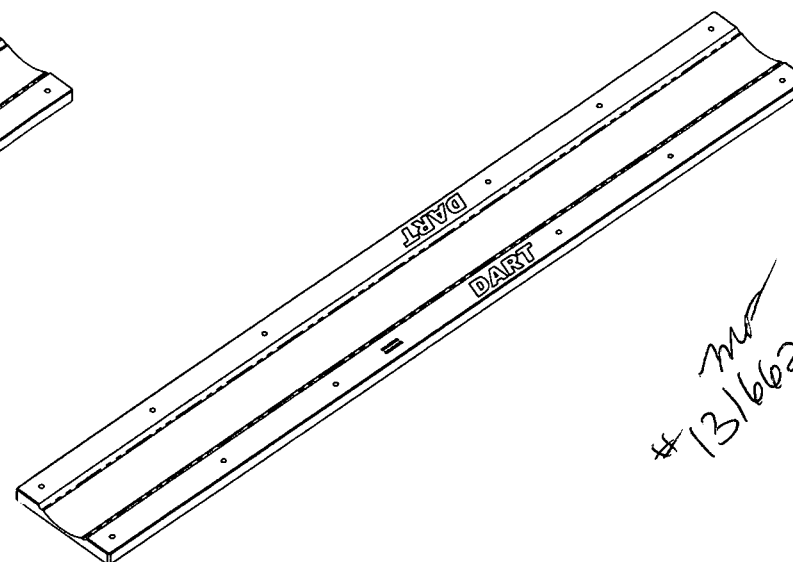
QA Closed: _____ Date: _____

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D3795-1 412 SKI - FWD SECTION



D3795-3 412 SKI - MID SECTION

mu
#131662

RELEASED
2012-09-12

NOTES:

- 1) MATERIAL: UHMW BLACK TIVAR 1000 VIRGIN MATERIAL
REF DART SPEC MUHMWB
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: - ENGRAVE WITH DART P/N "D3795-X" AND B/N "BXXXXX" USING 0.13 HIGH LETTERS TO MAX DEPTH OF 0.010
- ENGRAVE WITH DART LOGO USING 1.00 HIGH LETTERS TO MAX DEPTH OF 0.012
- 7) WEIGHT: D3795-1 = 9.37 lbs
D3795-3 = 7.90 lbs

C	REMOVED UNNECESSARY COUNTERBORED HOLES IN D3795-3 (C5-3, D5-3)	AP	12.09.06
B	CHAMFER WAS 0.31 x 45° NOW 0.19 x 45° (B1-3)	AP	12.08.01
A	NEW ISSUE	MB	08.07.08
REV.	DESCRIPTION	BY	DATE
DESIGN	MB	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	AP		
CHECKED	<i>SP</i>	DRAWING NO.	REV. C
MFG. APPR.	<i>SP</i>	D3795	SHEET 1 OF 3
APPROVED	<i>SP</i>	TITLE	SCALE
DE APPR.	<i>SP</i>	412 SKI SECTIONS	NTS
DATE	12.09.06	COPYRIGHT © 2008 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR DISSEMINATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
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DART AEROSPACE LTD		Work Order: 171662
Description: Ski, Fwd Section		Part Number: D3795-1
Inspection Dwg: D3795	Rev: C	Page 1 of 2

FIRST ARTICLE INSPECTION CHECKLIST

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
6.62	+/-0.030	6.623	/		Vern	FK-08
3.40	+/-0.030	3.40	/		"	"
R0.25	+/-0.030	.25	/		R-G	
0.050 x 45°	+/-0.010 x +/-0.5°	.050	/		Vern	FK-04
0.063 x 45°	+/-0.010 x +/-0.5°	.060	/		"	"
0.19 x 45°	+/-0.030 x +/-0.5°	.19	/		"	"
0.063 x 45°	+/-0.010 x +/-0.5°	.060	/		"	"
0.38	+0.030/-0.010	.380	/		"	"
0.20	+0.030/-0.010	.195	/		"	"
0.25	+0.030/-0.010	.243	/		"	"
R0.25	+/-0.030	.250	/		R-G	
0.75	+0.030/-0.010	.740	/		Vern	FK-04
0.95	+0.030/-0.010	.949	/		"	"
0.38	+/-0.030	.381			"	"
R0.63	+/-0.030	1.63			R-G	
R0.50	+/-0.030	.50			"	
R0.38	+/-0.030	.38			"	
R2.00	+/-0.030	2.00			"	
R0.50	+/-0.030	.50			"	
R0.25	+/-0.030	.25			"	
R0.13	+/-0.030	.130			"	
Ø0.261	+0.006/-0.001	.260			Vern	FK-04
Ø0.93	+/-0.030	.928			"	"
0.30	+/-0.030	.295			"	"
44.69	+/-0.030	44.69			Tape	FK-08
23.56	+/-0.030	23.56			"	"
14.81	+/-0.030	14.81			"	"
9.625	+/-0.010	9.625			"	"
1.000	+/-0.010	1.000			Vern	FK-04
7.000	+/-0.010	7.000			"	"
12.000	+/-0.010	12.000			"	"

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
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DART AEROSPACE LTD		Work Order: 137669
Description: Ski, Fwd Section		Part Number: D3795-1
Inspection Dwg: D3795 Rev: C		Page 2 of 2

FIRST ARTICLE INSPECTION CHECKLIST

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
19.000	+/-0.010	19.000	✓		Tape	FK-05
4.00	+/-0.030	3.997	✓		Vern	FK-04
0.050 x 45°	+/-0.010 x +/-0.5°	.050 x 45°	✓		"	"
0.25	+0.030/-0.010	.243	✓		"	"

DAS		DAS		Preliminary Approval:	
Measured by:	44 9-89	Audited by:	14 9-89		
Date:	15/04/30	Date:	15/05/01	Date:	

Rev	Date	Change	Revised by	Approved
A	12.07.31	New Issue	KJ	
B	12.09.26	Dwg Rev updated	KJ	

DQA: _____ Date: _____

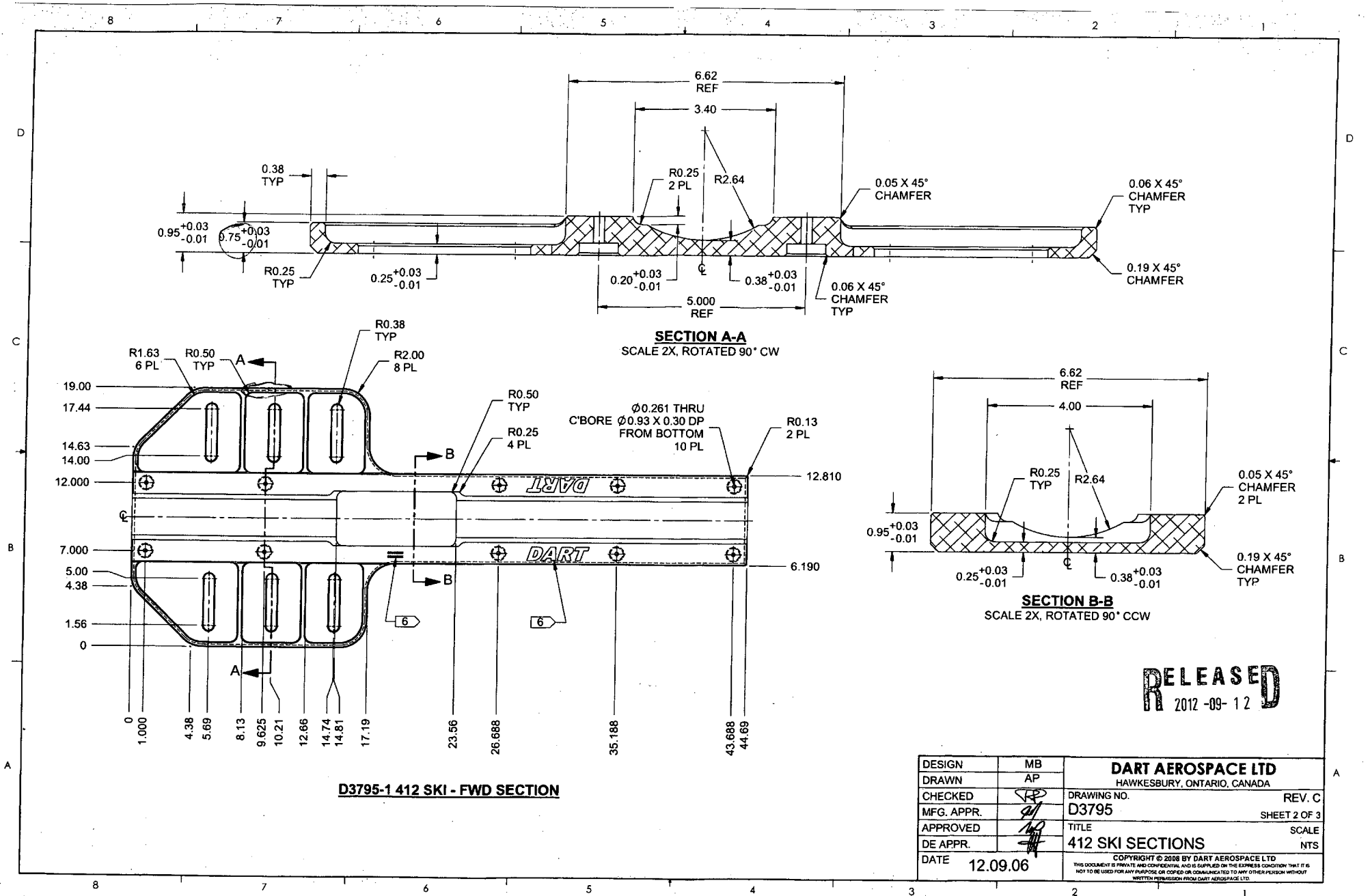


WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
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Root Cause		FAULT CATEGORY			
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OTHER : ☐					



DQA: _____ Date: _____

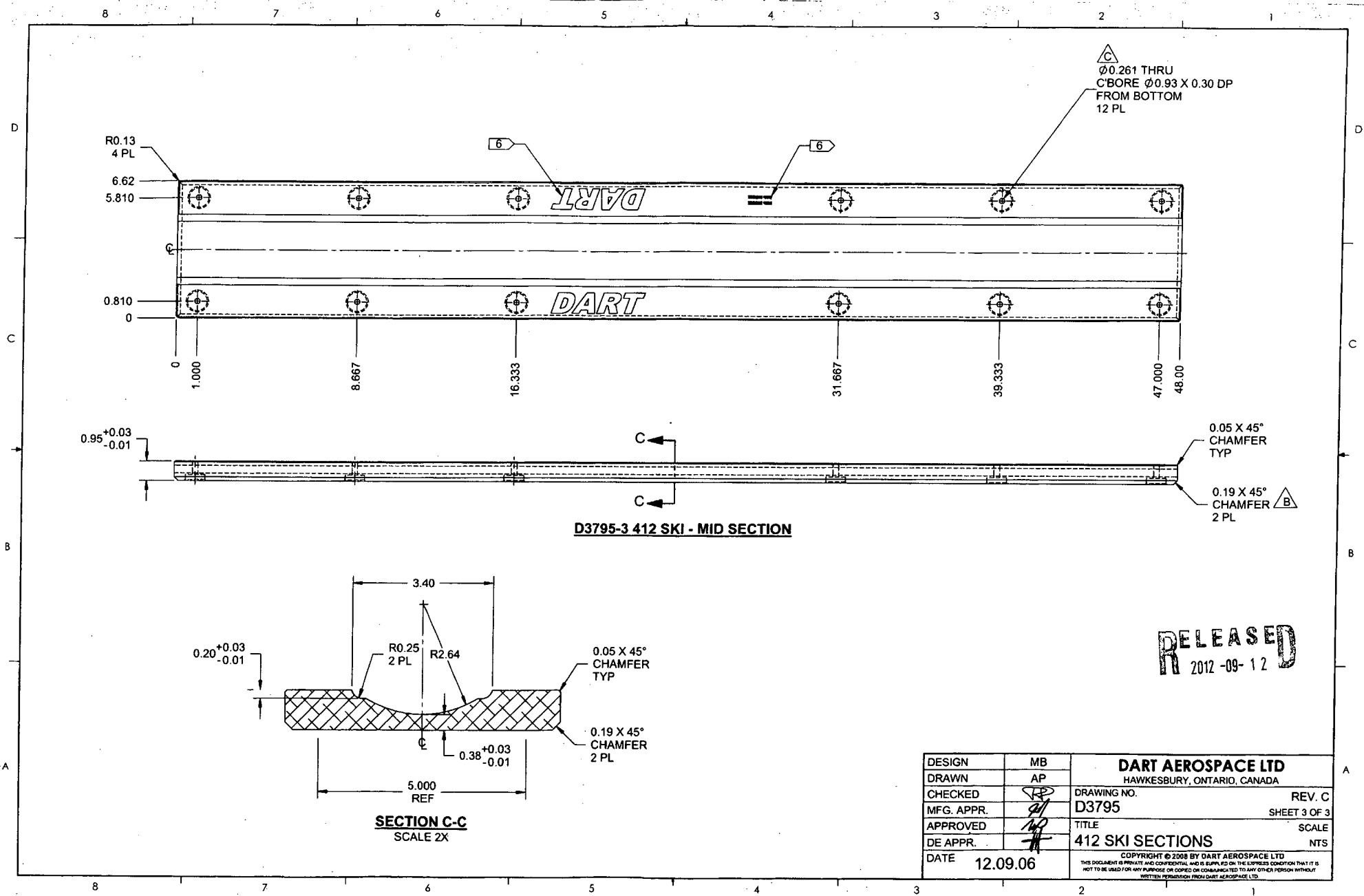


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Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐																				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐																				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐																				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____																							
Misidentified ☐	Past Due ☐																								



DESIGN	MB	DART AEROSPACE LTD	
DRAWN	AP	HAWKESBURY, ONTARIO, CANADA	
CHECKED	AP	DRAWING NO. D3795	REV. C
MFG. APPR.	AP	SHEET 3 OF 3	
APPROVED	AP	TITLE 412 SKI SECTIONS	SCALE
DE APPR.	AP	NTS	
DATE	12.09.06	COPYRIGHT © 2008 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR REPRODUCED IN ANY MANNER WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QS1042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause				FAULT CATEGORY					
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
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